Introduction—

The Logic of Backward Design

Introduction

The *Understanding by Design Professional Development Workbook* is designed primarily as a resource for participants in *Understanding by Design* (UbD) workshops and undergraduate and graduate-level courses. It is also intended to support educators developing curricula and assessments with a focus on developing and deepening students' understanding of important ideas. The workbook builds on the ideas presented in its companion publication, *Understanding by Design,* with an emphasis on the practical issues of curriculum design.

To support learning and applying the ideas of *Understanding by Design*, the workbook contains the following six categories of materials:

1. **Design Templates**—practical organizers based on the three stages of backward design for use in developing a unit or course. One-, two-, and six-page versions of the UbD Template are provided.
2. **Design Standards**—criteria for reviewing curricular designs as a means of continuous improvement. The UbD Standards guide self-assessment and peer reviews, whereby colleagues provide feedback and guidance on each other's designs.
3. **Exercises and Process Tools**—thought-provoking workshop activities for developing and deepening participants' understanding of the key ideas of UbD. A set of review and reflection tools is included.
4. **Design Tools**—a variety of practical worksheets and graphic organizers are available to assist designers in each stage of backward design.
5. **Examples**—multiple examples from diverse subject areas and levels illustrate the various elements of understanding-based designs.
6. **Glossary**—definitions of key terms.

We recommend that readers also access the Understanding by Design Exchange Web site (http://ubdexchange.org). The site features electronic design templates based on backward design, a searchable database of curriculum units and assessment tasks created in the UbD format, and an online review process based on the Design Standards.

Additional resources, such as hot links to other supportive Web sites, answers to Frequently Asked Questions, and expert reviews are offered to members.

Product Versus Process

It is important for users of this workbook to distinguish between the *goal* of their design work—producing a coherent design with clear alignment among the three stages—and the *process* of achieving it. To use an analogy, think of curriculum design in terms of two bookends. The first, a completed design in the UbD Template form; the second, a set of design standards for reviewing (and improving) the design. Everything in between—including the tools used, design sequence, and examples studied—is process. You'll notice that the design tools contain letter codes linked to the corresponding field on the Design Template to help users see the process–product connection.

We were inclusive in selecting examples, exercises, and design tools for the *UbD Workbook* because one size does not fit all. After all, curriculum design work is idiosyncratic: the preferred starting points, the sequences, and the tools used will be as varied as there are individual users in unique settings.

We have found that different people resonate with various approaches and tools, depending on the content and their own preferred style. For example, in Stage 1 there are six different design tools for prioritizing the curriculum and identifying the "big ideas" worth understanding. Although each tool has proven useful to some people some of the time, rarely would a single designer use them all.

Thus, users are encouraged to be selective and choose only those approaches and tools that work for them. Resist the urge to work on *every* page or to fill in *all* of the blanks on a design sheet. In other words, always keep the end result in mind, and don't get lost in the details!

Sequence

Curriculum design is not only idiosyncratic, but iterative. Although there is a clear logic embodied in the three stages of backward design, the process is not rigidly linear or step-by-step. Therefore, users of the *UbD Workbook* should not feel compelled to work through the materials in a rigid sequence. Indeed, successful designers find themselves constantly circling back to aspects of the design that need to be revised or rethought entirely in light of reflection, feedback from others, and experience with learners.

Building a unit or course design is thus more like painting from a blank canvas than painting by numbers, more like cooking from available ingredients than following cookbook recipes. As educational designers, we are like architects developing a blueprint. The architect cannot (in one fell swoop) listen to the client, review the building codes, research materials and labor costs, and develop a blueprint by following a step-by-step recipe. The blueprint emerges through a process of trying out ideas, getting feedback, matching the proposed ideas to the reality of the available space and client wishes. Each design idea affects other design ideas—and leads to a new, perhaps unexpected reaction by the client, who requires more changes.

On the other hand, there are some crucial givens in architecture: building codes, budget, and the number of rooms. The challenge in design is to keep playing with the

imaginative possibilities while ensuring that all the givens are honored. So, too, in curricular design. The designer can imagine all sorts of wonderful possibilities, but a new idea about learning activities may require a rethinking of the proposed assessment plan. Givens exist here, as well, including state content standards, realistic time and resource constraints, student achievement levels, and interest—all of which must be balanced with our imagination.

Thus, this workbook cannot and does not provide a step-by-step procedure for constructing a unit or course, any more than there is a foolproof procedure for developing architectural blueprints. What we have done is to organize the book according to the three stages of backward design, while allowing designers to begin in different places and follow varied pathways to achieve the same end—a complete design that meets standards.

We do not intend for participants in professional development workshops and university courses to march through the workbook page by page. Instead, think of this publication as a toolbox, and choose the tools for the job in a sequence that works for you.

We hope and trust that the Exercises, Examples, Templates, Design Tools, and Standards will lead to improved curriculum designs—units and courses focused explicitly on important questions and big ideas worthy of understanding, more convincing evidence of understanding by students, and more engaging instruction and learning for students and teachers alike. Ultimately, observable and measurable improvements in learning and performance will result.

A Social Studies Unit

Topic

Topic: Westward Movement and Pioneer Life
Social Studies—3rd Grade

Activities

1. Read textbook section—"Life on the Prairie." Answer the end-of-chapter questions.
2. Read and discuss *Sarah Plain and Tall*. Complete a word-search puzzle of pioneer vocabulary terms from the story.
3. Create a pioneer-life memory box with artifacts that reflect what life might be like for a child traveling west or living on the prairie.
4. Pioneer Day activities: Dress in pioneer clothes and complete the learning stations.
    a. Churn butter
    b. Play 19th-century game
    c. Send letter home with sealing wax
    d. Play "dress the pioneer" computer game
    e. Make a corn husk doll
    f. Quilting
    g. Tin punching

Assessments

1. Quiz on pioneer vocabulary terms from *Sarah Plain and Tall*
2. Answers to end-of-chapter questions on pioneer life
3. Show and tell for memory-box contents
4. Completion of seven learning stations during Pioneer Day
5. Student reflections on the unit

Activity-Oriented Design
(Before Backward Design)

Stage 1—Desired Results

Established Goals: (G)

Topic: Westward Movement and Pioneer Life

Understandings: (U)
Students will understand that . . .

Essential Questions: (Q)

Students will know. . . (K)

- Factual information about prairie life
- Pioneer vocabulary terms
- The story, *Sarah Plain and Tall*

Students will be able to. . . (S)

Stage 2—Assessment Evidence

Performance Tasks: (T)

Other Evidence: (OE)

a. Show and tell for the memory box and its contents: What would you put in it? Why?

b. Quiz on pioneer vocabulary from *Sarah Plain and Tall*

c. Answers to factual questions on *Sarah Plain and Tall* and from the textbook chapter

d. Written unit reflection

Stage 3—Learning Plan

Learning Activities: (L)

a. Read textbook section "Life on the Prairie." Answer the end-of-chapter questions.

b. Read *Sarah Plain and Tall*. Complete word search on pioneer vocabulary.

c. Create a pioneer life trunk with artifacts you might take on a journey to a new life.

d. Prairie Day activities:
   1. Churn butter
   2. Play a 19th-century game
   3. Seal a letter with sealing wax
   4. Play "dress the pioneer" computer game
   5. Make a corn husk doll
   6. Quilting
   7. Tin punching

After Backward Design

Stage 1—Desired Results

Established Goals: (G)

2D—Explain the lure of the West while comparing the illusions of migrants with the reality of the frontier.
5A—Demonstrate understanding of the movements of large groups of people in the United States now and long ago.
Source: National Standards for United States History

Understandings: (U)

Students will understand that . . .

- Many pioneers had naive ideas about the opportunities and difficulties of moving West.
- People move for a variety of reasons—for new economic opportunities, greater freedoms, or to flee something.
- Successful pioneers rely on courage, ingenuity, and collaboration to overcome hardships and challenges.

Essential Questions: (Q)

- Why do people move? Why did the pioneers leave their homes to head west?
- How do geography and topography affect travel and settlement?
- Why did some pioneers survive and prosper while others did not?
- What is a pioneer? What is "pioneer spirit"?

Students will know . . . (K)

- Key facts about the westward movement and pioneer life on the prairie
- Pioneer vocabulary terms
- Basic geography (i.e., the travel routes of pioneers and location of their settlements)

Students will be able to . . . (S)

- Recognize, define, and use pioneer vocabulary in context
- Use research skills (with guidance) to find out about life on the wagon train and prairie
- Express their findings orally and in writing

Stage 2—Assessment Evidence

Performance Tasks: (T)

- Create a museum display, including artifacts, pictures, and diary entries, depicting a week in the life of a family of settlers living on the prairie. (What common misunderstandings do folks today have about prairie life and westward settlement?)
- Write one letter a day (each representing a month of travel) to a friend "back east" describing your life on the wagon train and the prairie. Tell about your hopes and dreams, then explain what life on the frontier was *really* like. (Students may also draw pictures and explain orally.)

Other Evidence: (OE)

- Oral or written response to one of the Essential Questions
- Drawings showing hardships of pioneer life
- Test on facts about westward expansion, life on the prairie, and basic geography
- Using pioneer vocabulary in context
- Explanation of the memory box contents

Stage 3—Learning Plan

Learning Activities: (L)

- Use K-W-L to assess students' prior knowledge and identify learning goals for the unit.
- Revise Prairie Day activities (*e.g.*, substitute *Oregon Trail 2* computer simulation for "dress the pioneer" and ask for journal entries while the simulation is played).
- Include other fictional readings linked to the identified content standards or understandings (*e.g.*, *Little House on the Prairie, Butter in the Well*).
- Create a timeline map of a pioneer family's journey west.
- Add nonfiction sources to accommodate various reading levels, such as *Life on the Oregon Trail, Diaries of Pioneer Women and Dakota Dugout*. Guide students in using a variety of resources to research the period.
- Review the scoring rubrics for memory box, museum display, letters, and journals before students begin the performance tasks. Include opportunities for students to study examples of these products.

After Backward Design (continued)

Stage 1—Desired Results

Established Goals: G

2D—Students analyze cultural interactions among diverse groups (consider multiple perspectives).
Source: National Standards for United States History, p. 108

Understandings: U

Students will understand that . . .

- The settlement of the West threatened the lifestyle and culture of Native American tribes living on the plains.

Essential Questions: Q

- Whose "story" is it?
- Who were the winners and who were the losers in the settlement of the West?
- What happens when cultures collide?

Students will know . . . K

- Key factual information about Native American tribes living on the plains and their interactions with the settlers

Students will be able to . . . S

Stage 2—Assessment Evidence

Performance Tasks: T

- Imagine that you are an elderly tribal member who has witnessed the settlement of the plains by the "pioneers." Tell a story to your 8-year-old granddaughter about the impact of the settlers on your life. (This performance task may be done orally or in writing.)

Other Evidence: OE

- Quiz on facts about Native American tribes living on the plains

Stage 3—Learning Plan

Learning Activities: L

- Stage a simulated meeting of a council of elders of a Native American tribe living on the plains to have students consider a different perspective.
- Discuss: "What should we do when threatened with relocation—fight, flee, or agree to move (to a reservation)? What effect would each course of action have on our lives?"

Textbook-Oriented Design
(Before Backward Design)

Geometry

Stage 1—Desired Results

Established Goals: G

Topic: Surface Area and Volume (geometry)

Understandings: U

Students will understand that . . .

Essential Questions: Q

Students will know . . . K

- How to calculate surface area and volume for various 3-dimensional figures
- Cavalieri's Principle
- Other volume and surface-area formulas

Students will be able to . . . S

- Use Cavalieri's Principle to compare volumes
- Use other volume and surface-area formulas to compare shapes

Stage 2—Assessment Evidence

Performance Tasks: T

Other Evidence: OE

a. Odd-numbered problems in full Chapter Review, pp. 516–519

b. Progress on self-test, p. 515

c. Homework: each third question in subchapter reviews and all explorations

Stage 3—Learning Plan

Learning Activities: L

- Read Chapter 10 in UCSMP Geometry.
- Exploration 22, p. 482: "Containers holding small amounts can be made to appear to hold more than they do by making them long and thin. Give some examples."
- Exploration 25, p. 509: "Unlike a cone or cylinder, it is impossible to make an accurate two-dimensional net for a sphere. For this reason, maps of earth are distorted. The Mercator projection is one way to show the earth. How is this projection made?"

After Backward Design

Geometry

Stage 1—Desired Results

Established Goals: G

IL MATH 7C3b, 4b: Use models and formulas to find surface areas and volumes.
IL MATH 9A: Construct models in 2D/3D; make perspective drawings.

Source: Illinois Mathematics Standards

Understandings: U

Students will understand that . . .

- The adaptation of mathematical models and ideas to human problems requires careful judgment and sensitivity to impact.
- Mapping three dimensions onto two (or two onto three) may introduce distortions.
- Sometimes the best mathematical answer is not the best solution to real-world problems.

Essential Questions: Q

- How well can pure mathematics model messy, real-world situations?
- When is the best mathematical answer not the best solution to a problem?

Students will know . . . K

- Formulas for calculating surface area and volume
- Cavalieri's Principle

Students will be able to . . . S

- Calculate surface area and volume for various 3-dimensional figures
- Use Cavalieri's Principle to compare volumes

Stage 2—Assessment Evidence

Performance Tasks: T

- Packaging problem: What is the ideal container for shipping bulk quantities of M&M's packages cost-effectively to stores? (Note: the "best" mathematical answer—a sphere—is not the best solution to this problem.)
- As a consultant to the United Nations, propose the least controversial 2-dimensional map of the world. Explain your mathematical reasoning.

Other Evidence: OE

a. Odd-numbered problems in full Chapter Review, pp. 516–519

b. Progress on self-test, p. 515

c. Homework: each third question in subchapter reviews and all explorations

Stage 3—Learning Plan

Learning Activities: L

- Investigate the relationship of surface areas and volume of various containers (e.g., tuna fish cans, cereal boxes, Pringles, candy packages).
- Investigate different map projections to determine their mathematical accuracy (i.e., degree of distortion).

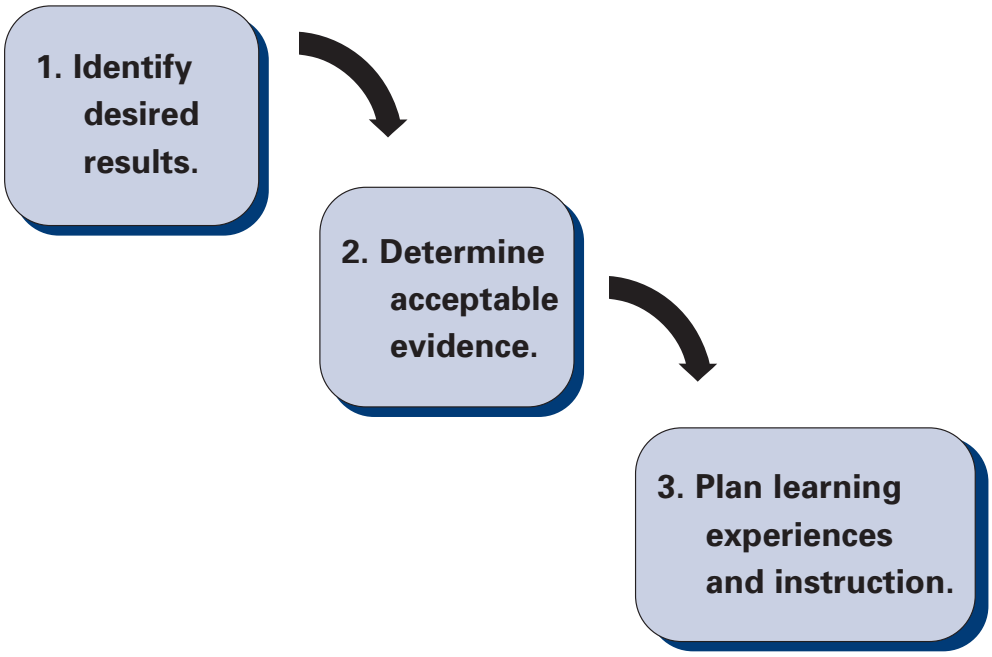
a. Read Chapter 10 in UCSMP Geometry

b. Exploration 22, p. 504

c. Exploration 22, p. 482

d. Exploration 25, p. 509

UbD: Stages of Backward Design



The backward design approach consists of three general stages:

Stage 1. Identify Desired Results. In Stage 1 we consider the goals. What should students know, understand, and be able to do? What big ideas are worthy of understanding and implied in the established goals (e.g., content standards, curriculum objectives)? What "enduring" understandings are desired? What provocative questions are worth pursuing to guide student inquiry into these big ideas? What specific knowledge and skills are targeted in the goals and needed for effective performance?

Stage 2. Determine Acceptable Evidence. In the second stage we consider evidence of learning. How will we know if students have achieved the desired results and met the content standards? How will we know that students *really* understand the identified big ideas? What will we accept as evidence of proficiency? The backward design orientation suggests that we think about our design in terms of the collected assessment evidence needed to document and validate that the desired results of Stage 1 have been achieved.

Stage 3. Plan Learning Experiences and Instruction. With identified results and appropriate evidence of understanding in mind, it is now time to finalize a plan for the learning activities. What will need to be taught and coached, and how should it best be taught, in light of the performance goals? What sequence of activity best suits the desired results? In planning the learning activities, we consider the WHERETO elements (described later) as guidelines. Those guidelines can be summed up in a question: How will we make learning both engaging *and* effective, given the goals and needed evidence?

1-Page Template

Stage 1—Desired Results

Established Goals: G

Understandings: U
Students will understand that . . .

Essential Questions: Q

Students will know . . . K

Students will be able to . . . S

Stage 2—Assessment Evidence

Performance Tasks: T

Other Evidence: OE

Stage 3—Learning Plan

Learning Activities: L

1-Page Template with Design Questions

Stage 1—Desired Results

Established Goals: G

- What relevant goals (e.g., content standards, course or program objectives, learning outcomes) will this design address?

Understandings: U

Students will understand that . . .

- What are the big ideas?
- What specific understandings about them are desired?
- What misunderstandings are predictable?

Essential Questions: Q

- What provocative questions will foster inquiry, understanding, and transfer of learning?

Students will know . . . K

- What key knowledge and skills will students acquire as a result of this unit?

Students will be able to . . . S

- What should they eventually be able to do as a result of such knowledge and skill?

Stage 2—Assessment Evidence

Performance Tasks: T

- Through what authentic performance tasks will students demonstrate the desired understandings?
- By what criteria will performances of understanding be judged?

Other Evidence: OE

- Through what other evidence (e.g., quizzes, tests, academic prompts, observations, homework, journals) will students demonstrate achievement of the desired results?
- How will students reflect upon and self-assess their learning?

Stage 3—Learning Plan

Learning Activities: L

What learning experiences and instruction will enable students to achieve the desired results? How will the design

W = Help the students know **W**here the unit is going and **W**hat is expected? Help the teacher know **W**here the students are coming from (prior knowledge, interests)?
H = **H**ook all students and **H**old their interest?
E = **E**quip students, help them **E**xperience the key ideas and **E**xplore the issues?
R = Provide opportunities to **R**ethink and **R**evise their understandings and work?
E = Allow students to **E**valuate their work and its implications?
T = Be **T**ailored (personalized) to the different needs, interests and abilities of learners?
O = Be **O**rganized to maximize initial and sustained engagement as well as effective learning?

Alignment: The Logic of Backward Design

Westward Expansion and Pioneer Life

(What Do the Desired Results Imply?)

Stage 1	Stage 2	Stage 3
If the desired result is for learners to . . .	***Then, you need evidence of the students' ability to . . .***	***Then, the learning activities need to . . .***
Understand that . . . (U) • Many lives were sacrificed and hardships endured to settle the West. • Many pioneers had naive ideas about the opportunities and difficulties of moving west. • All pioneers display great ingenuity, courage, and collaboration in overcoming obstacles. **And thoughtfully consider the questions . . .** (Q) • Why do people move? Why did pioneers leave their homes to head west? • What is a pioneer? • Why did some pioneers survive and prosper while others did not?	• Infer from examining primary and secondary accounts why the migrants left home to travel west and what pioneers' lives were *really* like. • Find and select appropriate information sources about westward movement and pioneer life (*e.g.*, in the library and on the Internet). • Use pioneer terms and historical facts accurately in various contexts. **Then, the tasks to be assessed need to include some things like . . .** (T) • Create a museum display, including artifacts, pictures, and diary entries, depicting a week in the life of a family of settlers living on the prairie. (What common misunderstandings do folks today have about prairie life?) • Write one letter a day (each representing a month of travel) to a friend "back east" describing life on the wagon train and the prairie. • Pass a test on basic facts about westward expansion and prairie life. (OE) • Respond orally or in writing to one of the Essential Questions. • Create drawings showing hardships of pioneer life.	*Help students* (L) 1. Learn about westward movement and prairie life, 2. Empathize with the pioneers and their challenges and 3. Show what they have learned by: • Reading, viewing, and discussing primary and secondary information sources. • Reading and discussing relevant literature, such as *Little House on the Prairie.* • Using computer simulations, such as *Oregon Trail 2.* • Making the big ideas real through experiential activities (*e.g.*, Prairie Day) near the outset of the unit and discussing and reflecting on the meaning of the experiences. • Gathering additional information through research. • Showing what an interesting and effective museum display is like. • Offering models and providing guided practice in writing letters and journals. • Providing feedback on the performance and product work under construction.

Alignment: The Logic of Backward Design Template

(What Do the Desired Results Imply?)

Stage 1	Stage 2	Stage 3
If the desired result is for learners to . . . ⇨	***Then, you need evidence of the students' ability to . . .*** ⇨	***Then, the learning activities need to . . .***
Understand that . . . U		L
And thoughtfully consider the questions . . . Q	**Then, the tasks to be assessed need to include some things like . . .** T	
	OE	

Sample Design for a UbD Workshop

Stage 1—Desired Results

Understandings: (U)

Students will understand that . . .

- Effective curriculum design evolves backward from clear goals and is aligned across all three stages.
- UbD is a way of thinking more carefully about curriculum design; it is not a prescriptive program.
- Using design standards improves quality.
- The UbD design process is nonlinear and iterative.
- Teaching and assessing for understanding enhances learning of content standards.

Essential Questions: (Q)

- Why are the best curriculum designs backward?
- What is good design? How does UbD support effective curriculum design?
- How does continuous improvement apply to curriculum design?
- Why teach for understanding?
- How will we know that students *really* understand?
- What is the difference between understanding and knowing?

Students will know . . . (K)

- The three stages of backward design
- Characteristics of big ideas and essential questions
- The six facets of understanding and GRASPS
- The WHERETO elements of instructional planning
- Design standards for UbD

Students will be able to . . . (S)

- Develop understandings, essential questions, and assessment evidence
- Draft a unit in the template
- Review designs against the design standards

Stage 2—Assessment Evidence

Performance Tasks: (T)

- Develop a draft design using the UbD template and tools. (Design meets most of the UbD design standards.)
- Participate in a peer review process using design standards and provide feedback to designers.

Other Evidence: (OE)

- Pre- and post-workshop surveys
- Observations of participants' understandings, questions, misconceptions, frustrations
- Quality of responses on exercises and worksheets
- Participant self-assessments and reflections on their understandings and design
- Written and oral feedback to presenter

Stage 3—Learning Plan

Learning Activities: (L)

- Overview of session; performance goal; meet in role-alike groups
- Exercise on good design
- Study and discuss before and after design examples
- Guided design work on each stage
- Watch and discuss relevant video clips
- Gallery walk to review participants' designs
- Lecture and discussion on key design elements and issues
- Peer review against design standards
- Action planning for UbD (classroom, school, or district level)

Developing a UbD Action Plan Using Backward Design

Stage 1—Desired Results

Established Goals: G

What are our goals (e.g., what would be seen in classrooms, schools, and the district if designing, teaching, and assessing for understanding were the norm)?

Understandings: U

To achieve our goals, what understandings will be needed (e.g., by teachers, administrators, policymakers, parents, students)?

Essential Questions: Q

What essential questions will focus our goals, stimulate conversation, and guide our actions?

K

To achieve our goals, what knowledge and skills will be needed (e.g., by teachers, administrators, policymakers, parents, students)? S

Stage 2—Assessment Evidence

E

What will count as evidence of our success?

What baseline data (e.g., student achievement gaps; staff understandings, attitudes, and practices; organizational capacity) should be collected?

What are key indicators of our short-term and long-term progress?

Stage 3—Action Plan

Actions: L

What actions will help us realize our goals efficiently?

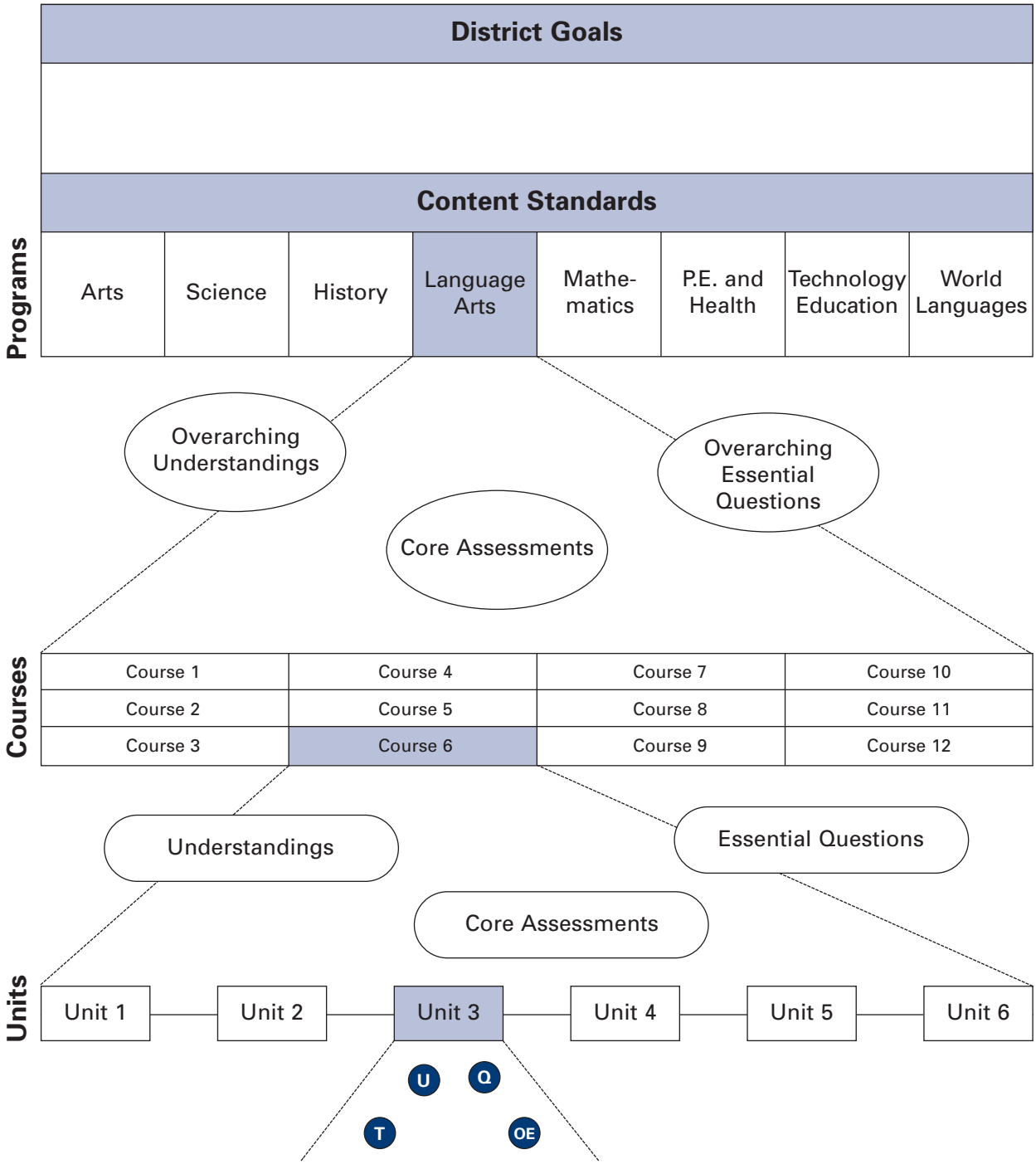
What short- and long-term actions will we take?

Who should be involved? informed? responsible?

What predictable concerns will be raised? How will we address them?

UbD Curriculum Framework: The Macro View

Understanding by Design offers a 3-stage backward design framework for developing units of study (micro level). The same process guides larger-scale curriculum development for courses and programs (macro level). The following visual represents a UbD curriculum structure for building a coherent curriculum, spiraling around big ideas, essential questions, and core assessments.



UbD Curriculum Map for Stage 1

U.S. History, Grade 7

Course Understanding	Course Essential Questions	Course Skills
Students will understand that… • The preambles to the Declaration of Independence and the Constitution establish the ideal for why we need government and principles that should guide the government's decision-making—providing a framework by which we can evaluate our nation's progress and suggest means for improvement. • Progress often comes at a price—the extent of which allows history to judge its success. • Individuals, even outside of elected leaders, can have a profound impact on history. • The United States abandoned its isolationist policy as economic and geopolitical interests began to change, becoming the dominant world power with new challenges and responsibilities. • To promote the general welfare, the government has attempted to balance the need to let the market operate freely with the need to regulate it in order to safeguard public interests. • Geography continues to influence the economic, political, and social development of our nation. • Throughout U.S. history, war-time fears and perceived threats to security have led to the denial of certain civil liberties. • U.S. culture reflects the events of the day and shapes how we perceive ourselves. • Ratification of the Constitution did not end the debate on governmental power; rather, economic, regional, social, and ideological tensions that emerged, and continue to emerge, further debates over the meaning of the Constitution and the proper balance between federal and state power. • The government and public commitment to civil and equal rights has advanced.	**Are we becoming the nation we set out to be?** • What price progress? • How do individuals make a difference? • How did the United States become *the* world power? • What issues determine our involvement in foreign affairs? • Why did the United States abandon its traditional isolationist foreign policy? • Should commitment to the ideals in the Constitution extend beyond our borders? • What is the government's responsibility to promote the general welfare? • Should the government be more hands-on or hands-off with regard to the economy? • How does geography influence history? • Why is there a struggle between security and liberty? • How has the cultural identity of the United States changed over time? • How has the struggle between states' rights and federal power played out over time? • How has the government's commitment to establish justice changed over time? • How has the definition of justice changed to become more inclusive?	**Students will develop skills for historical and geographical analysis, including the ability to** • Identify, examine, and interpret primary and secondary source documents to increase understanding of events and life in U.S. history. • Make connections between the past and the present. • Sequence significant events in U.S. history from Constitutional times to present. • Interpret ideas and events from different historical perspectives. • Evaluate and discuss issues orally and in writing. • Create and explain maps, diagrams, tables, charts, and graphs. • Analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events. • Analyze political cartoons, political advertisements, pictures, and other graphic media. • Distinguish between relevant and irrelevant information. • Review information for accuracy, separating fact from opinion. • Identify a problem and recommend solutions. • Select and defend positions in writing, discussion, and debate.

UbD Curriculum Map for Stage 1 (continued)

U.S. History, Grade 7

Unit Understandings	Unit Essential Questions
Students will understand that . . . 1. The Declaration of Independence and Constitution establish the ideal for why we need government and principles that should guide the government's decision-making. 2. The Constitution was written in reaction to the inadequacy of government (under the Articles of Confederation) to provide for the protection of natural rights and to promote democratic ideals. 3. Geography influenced the economic, political, and social concerns of the founders, which was reflected in the compromises made within the Constitution. 4. The U.S. Constitution is the most enduring and successful blueprint for self-government in human history because it established a government that derives its power from the people, shares power between national and state governments, protects the rights of individuals, and provides a system for orderly change through amendments and interpretation. **Individuals Who Made a Difference** John Locke, Charles-Louis de Secondat Montesquieu, Jean-Jacques Rousseau, Daniel Shays, George Washington, Thomas Jefferson, Ben Franklin, James Madison, Alexander Hamilton	1. Why do we need a constitution? *Related Course EQs: How do individuals make a difference? What is the government's responsibility to promote the general welfare?* 2. Why is the constitution structured the way it is? *Related Course EQs: How do individuals make a difference? What price progress? What is the government's responsibility to promote the general welfare? How does geography influence history? How has the struggle between states' rights and federal power played out over time?* 3. Why is the U.S. Constitution called a living document? Related Course EQs: *What is the government's responsibility to promote the general welfare? How has the government's commitment to "establish justice" changed over time? How has the cultural identity of America changed over time?* **Resources** ***History Alive! The Constitution in a New Nation***—The Roots of Government (1.1, 1.2, 1.3, 1.4); The Creation of the Constitution (2.1, 2.2, 2.3, 2.4, 1.4); The Creation of the Bill of Rights (3.1, 3.2, 3.3, 1.4); The Constitution in Action 1789–1820 (4.1, 4.2, 1.4); The Constitution in Action Today (5.1, 5.2, 5.3) **Primary Source Documents** • John Locke's writings on natural rights • The Declaration of Independence • The U.S. Constitution • Federalist Papers 10 and 51 *Courtesy of Mark Wise and the Middle School Social Studies Team, West Windsor-Plainsboro, NJ*

Curriculum Alignment Through Assessment

Quarterly Assessments, Grades 6–12

Grade	Expository	Persuasive	Literary Analysis	Creative and Expressive
6	Research paper	Position paper	Literary essay on setting or conflict	Original myth
7	Autobiography	Policy evaluation	Literary essay on character	Literary persona
8	Research report	Problem/ solution essay	Literary essay on symbolism	Narrative fiction
9	Cause and effect essay	Editorial	Analysis of multiple literary elements	Poetry
10	Research paper	Social issue essay	Critical lens essay	Historical persona
11	Definition essay	Argumentative essay	Comparative genre essay	Parody or satire
12	Research paper	Position paper	Response to literary criticism	Irony

Courtesy of Greece Central School District, New York

The Six Facets of Understanding

Facet 1—EXPLANATION

Sophisticated and apt explanations and theories that provide knowledgeable and justified accounts of events, actions, and ideas. Why is that so? What explains such events? What accounts for such action? How can we prove it? To what is the action connected? How does this work?

Facet 2—INTERPRETATION

Narratives, translations, metaphors, images, and artistry that provide meaning. What does it mean? Why does it matter? What of it? What does it illustrate or illuminate in human experience? How does it relate to me? What makes sense?

Facet 3—APPLICATION

Ability to use knowledge effectively in new situations and diverse contexts. How and where can we apply this knowledge, skill, process? How should my thinking and action be modified to meet the demands of this particular situation?

Facet 4—PERSPECTIVE

Critical and insightful points of view. From whose point of view? From which vantage point? What is assumed or tacit that needs to be made explicit and considered? What is justified or warranted? Is there adequate evidence? Is it reasonable? What are the strengths and weaknesses of the idea? Is it plausible? What are its limits? What is a novel way to look at this?

Facet 5—EMPATHY

The ability to get inside another person's feelings and worldview. How does it seem to you? What do they see that I don't? What do I need to experience if I am to understand? What was the author, artist or performer feeling, seeing, and trying to make me feel and see?

Facet 6—SELF-KNOWLEDGE

The wisdom to know one's ignorance and how one's patterns of thought and action inform as well as prejudice understanding. How does who I am shape my views? What are the limits of my understanding? What are my blind spots? What am I prone to misunderstand because of prejudice, habit, and style? How do I learn best? What strategies work for me?

UbD Design Standards

Stage 1—To what extent does the design focus on the big ideas of targeted content?

Consider: Are . . .

- ❍ The targeted understandings enduring, based on transferable, big ideas at the heart of the discipline and in need of uncoverage?
- ❍ The targeted understandings framed by questions that spark meaningful connections, provoke genuine inquiry and deep thought, and encourage transfer?
- ❍ The essential questions provocative, arguable, and likely to generate inquiry around the central ideas (rather than a "pat" answer)?
- ❍ Appropriate goals (e.g., content standards, benchmarks, curriculum objectives) identified?
- ❍ Valid and unit-relevant knowledge and skills identified?

Stage 2—To what extent do the assessments provide fair, valid, reliable and sufficient measures of the desired results?

Consider: Are . . .

- ❍ Students asked to exhibit their understanding through authentic performance tasks?
- ❍ Appropriate criterion-based scoring tools used to evaluate student products and performances?
- ❍ A variety of appropriate assessment formats used to provide additional evidence of learning?
- ❍ The assessments used as feedback for students and teachers, as well as for evaluation?
- ❍ Students encouraged to self-assess?

Stage 3—To what extent is the learning plan effective and engaging?

Consider: Will the students . . .

- ❍ Know *where* they're going (the learning goals), *why* the material is important (reason for learning the content) and *what* is required of them (unit goal, performance requirements and evaluative criteria)?
- ❍ Be *hooked*—engaged in digging into the big ideas (e.g., through inquiry, research, problem solving, and experimentation)?
- ❍ Have adequate opportunities to *explore* and *experience* big ideas and receive instruction to *equip* them for the required performances?
- ❍ Have sufficient opportunities to *rethink, rehearse, revise* and *refine* their work based upon timely feedback?
- ❍ Have an opportunity to *evaluate* their work, reflect on their learning, and set goals?

Consider: Is the learning plan . . .

- ❍ *Tailored* and flexible to address the interests and learning styles of all students?
- ❍ *Organized* and sequenced to maximize engagement and effectiveness?

Overall Design—To what extent is the entire unit coherent, with the elements of all three stages aligned?

Frequently Asked Questions About Backward Design

This three-stage approach makes sense. So, why do you call it "backward" design?

We use the term "backward" in two ways.

First, plan with the "end in mind" by first clarifying the learning you seek; that is, the desired learning results (Stage 1). Then, think about the evidence needed to certify that students have achieved those desired learnings (Stage 2). Finally, plan the means to the end; that is, the teaching and learning activities and resources to help students achieve the goals (Stage 3). We have found that backward design, whether applied by individual teachers or district curriculum committees, helps to avoid the twin sins of activity-oriented and coverage-oriented curriculum planning.

Our second use of the term refers to the fact that this approach is backward relative to the way some educators plan. For years, we have observed that curriculum planning often translates into listing activities (Stage 3), with only a general sense of intended results and little, if any, attention to assessment evidence (Stage 2). Many teachers have commented that the UbD planning template makes sense but feels awkward, given that it requires a break from comfortable planning habits.

Backward design is not a new concept. In 1948 Ralph Tyler articulated a similar approach to curriclum planning. In more recent times, outcome-based education advocates, such as William Spady, recommended that curriculum be "designed down" from desired outcomes. In the best-selling book 7 *Habits of Highly Effective People,* Stephen Covey conveys a similar finding: Effective people plan with the end in mind (Covey, 1989).

Do you have to follow the template order (top to bottom) when you design?

No. Backward design does not demand a rigid sequence. The process is inherently nonlinear with various entry points that lead to an organized product. The final design is presented in a logical format, via the UbD template. While the final *product* reflects the

three-stage logic, the designing *process* typically unfolds in an iterative and unpredictable way, with the end result in mind. Think of the difference between cooks experimenting in the kitchen and their final product: a new recipe. They may be inspired to start in various ways: with a fresh seasonal ingredient, a specific audience for whom to cook or the desire to test out new preparations. Much trial and error is likely as various combinations of ingredients, spices, temperatures, and timings are tried. But the final product is presented to others in an efficient step-by-step form. Similarly, while the UbD template provides a format for sharing the final design "recipe," it does not specify the sequence of the design process. (And, of course, designs as well as recipes will often be revised following feedback from peer review and use with students.)

Fill the template with your ideas as they come to you. We have observed that certain variables, such as subject area, topic, and a teacher's style, seem to influence the design sequence. (See page 276 for specific entry points that may be helpful as you work within the three stages.) Regardless of approach, designers should complete the template and routinely check the emerging design against the UbD Design Standards to ensure that the process yields the desired high-quality design.

Is Understanding by Design appropriate for all grades and subjects?

Yes—as long as the goals involve some big ideas worth understanding as opposed to those requiring only drill and recall (e.g., touch typing).

Can you use the three stages of backward design (and the UbD template) for lesson planning?

We have chosen the unit as a focus for design because the key elements of UbD—big ideas, enduring understandings, essential questions, and performances of understanding—are too complex and multifaceted to be satisfactorily addressed within a single lesson. For instance, essential questions are meant to be revisited over time, not answered by the end of a class period.

Nonetheless, we have found that the larger unit goals provide the context in which individual lessons are planned. Teachers often report that careful attention to Stages 1 and 2 sharpens their lesson planning, resulting in more purposeful teaching and improved learning.

How does a unit fit into an entire course or K–12 program?

While backward design certainly applies to the design of individual units, the process is also an effective way of mapping a coherent curriculum. When applying backward design to curriculum mapping, we consider our desired results—including content standards and other exit outcomes—and then map backward (e.g., 12 to K) to ensure that all the important results are explicitly addressed through the courses and units. Backward mapping helps to identify any gaps and redundancies in the curriculum, and to target needed curriculum revisions and additions.

Understanding by Design suggests a particular spin on the mapping process: Instead of simply listing the topics taught, a UbD map specifies the big ideas and essential questions that are addressed at various points in the curriculum. This approach

helps to identify the overarching ideas and essential questions that provide important throughlines in the curriculum. Throughlines are big ideas, not necessarily interdisciplinary, that run vertically throughout the curriculum. For example, in social studies an overarching EQ might be, *Why do people move?* This same question would then be examined in 3rd grade for the westward movement, 5th grade when we study the explorers, and 10th grade with immigration.

Additionally, we propose that a UbD map should include core assessment tasks that all students would perform to demonstrate their understanding of key ideas and processes. (Of course, these tasks would be accompanied by agreed-upon scoring rubrics.) We believe that such curriculum mapping brings conceptual clarity and coherence to the curriculum.

The UbD Web site (ubdexchange.org) enables electronic curriculum mapping and the linking of individual UbD units to the map. The maps can be generated online, easily amended, and printed on Excel spreadsheets.